

MR1035-1477
Serial Number: 10/092,392
Reply to Office Action dated 3 November 2004

REMARKS/ARGUMENTS

This case has been carefully reviewed and analyzed in view of the Official Action dated 3 November 2004. Responsive to the rejections made by the Examiner in the Official Action, Claims 1-24 have been amended and are now more clear in their respective recitations. Claims 1-24 will be pending in this Application upon entry of the Amendment filed herewith.

In the Official Action, the Examiner rejected Claims 1-3, 5-7, 11, 12, 15, 16, 18-20, 22 and 23 under 35 U.S.C. § 102(e) as being anticipated by Rhee (U.S. Patent 6,289,054). In setting forth the rejections, the Examiner cited Rhee's adapter 414 providing data to the transmitter 408 as fulfilling the previously claimed limitations of concatenating selected packet data portions for subsequent forward error correction data generation. The Examiner further rejected Claims 4, 10, 17 and 24 under 35 U.S.C. § 103(a) as being unpatentable over Rhee in view of Lewis, et al. (U.S. Patent 6,601,209; hereinafter Lewis). The Examiner relied on Lewis to show the use of BCH codes for the error correction of data during transmission. The Examiner also rejected Claims 8, 9, 13 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Rhee in view of Tan, et al. (U.S. Patent 6,075,576; hereinafter Tan). The Examiner observed that Rhee does not specifically disclose setting a flag to indicate a fixed Video Object Plane increment and relied on the teachings of Tan for such disclosure. Finally, the Examiner rejected Claim 14 under 35 U.S.C. § 103(a) as being unpatentable over

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Rhee in view of Watanabe, et al. (U.S. Patent 6,084,888; hereinafter Watanabe). The Examiner relied on Watanabe to show the use of a Header Extension Code (HEC) in every packet in a first sequence of packets.

Applicants' systems and methods for generating error correction information for a media stream affords a reduction in the number of forward error correction (FEC) bits which must be generated for, and transmitted with the data stream as part of the error resilient objectives set forth in the subject Patent Application. As the newly amended Claims now more clearly recite, this reduction in forward error correction overhead is achieved by "selecting portions of packet data from each of [a] plurality of packet frames" and "generating a forward error correction code for the selected portions of packet data exclusive of corresponding remaining portions of each of the plurality of frame packets". By prudent selection of appropriate portions of each of the plurality of frame packets, the number of bits in the FEC code may be set to correspond to a combined bit length of the selected portions of packet data and the overall number of forward error correction bits may be reduced thereby. As is well known in the art, FEC code words are typically of a length which is dependent on the block length of data for which error correction is to be provided. Thus, by features of Applicants' invention, relevant or critical portions of the data packets are selected for error correction and remaining portions of the packets are excluded therefrom. The portions of the data packets which are to have error correction provided are

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logically concatenated together and a single FEC code is generated for the resulting data block. Thus, the FEC code word length may be significantly reduced.

The full combinations of these and other features now more clearly recited by Applicants' pending Claims are nowhere disclosed by the cited references. Rhee's techniques for packet loss recovery adjusts a Periodic Temporal Dependency Distance (PTDD) to adapt the number of frame intervals between two consecutive periodic frames so as to allow sufficient bit space for a selected error recovery procedure. When the loss recovery scheme of Rhee uses FEC, the adapter 414 computes the number of FEC repair packets to be transmitted during a PTDD period. The PTDD is adjusted dynamically as required such that when FEC is not the selected loss recovery scheme, a packet retransmission scheme is selected and the PTDD is adjusted for that purpose. The concatenation of the selected portions of packet data cited by the Examiner as being described in column 6 of Rhee is actually that of typical data stream assembly with interleaved FEC data. Nowhere in Rhee is it disclosed or suggested that the FEC repair data be generated by other than conventionally known methods, and certainly not by "generating a forward error correction code for the selected portions of packet data exclusive of corresponding remaining portions of each of the plurality of frame packets" (emphasis added) as is advantageously implemented by Applicants' invention, as now claimed.

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Among the beneficial features of the invention of the subject Patent Application is the reduction in forward error correction code transmission overhead. This overhead is recognized in Rhee in column 7, lines 53-64. However, the overhead described by Rhee is ameliorated by switching to a packet retransmission error recovery technique when network conditions will so allow. It is clear, then, that Rhee does not contemplate "selecting portions of packet data" and then "generating a forward error correction code for the selected portions of packet data exclusive of corresponding remaining portions of each of the plurality of frame packets" so as to reduce the number of FEC code bits that would ultimately be transmitted. It is believed that Applicants' invention is unique and non-obvious over the prior art in this and others of its features.

Given such contrary teachings of the primarily cited Rhee reference, the disclosures of the secondarily cited references are found to be quite ineffectual to the present patentability analysis. Lewis was cited for showing the use of BCH codes in error correction of data during transmission, Tan was cited to show fixed video object plane incrementing, and Watanabe was cited to show the use of a Header Extension Code (HEC) in a sequence of packets. None of these references, however, disclose or even suggest "generating a forward error correction code for ... selected portions of packet data exclusive of corresponding remaining portions of each of the plurality of frame packets". That being so, none of the references can be applied to Rhee so as to make obvious the invention of the

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subject Patent Application, notwithstanding that a motivation to do so is nowhere apparent in any of the references cited.

All of the pending Claims, as now amended, either by direct recitation or by inherency from its dependency on a base Claim, include the limitations of "generating a forward error correction code for the selected portions of packet data exclusive of corresponding remaining portions of each of the frame packets" or alternatively, "generate forward error correction data for selected portions of packet data exclusive of the remaining portions of each of the framed packets", or alternatively still, "generating forward correction data for selected portions of packet data from each of a plurality of frame packets exclusive of the remaining portions of packet data in each of the plurality of frame packets". It is submitted, respectfully, that the cited references, alone or even considered together, fail to disclose these and other of the unique combinations of elements and related method steps now more clearly recited by Applicants' pending Claims for the purposes and objectives disclosed in the subject Patent Application. Thus, it is believed that the invention so claimed is neither anticipated nor made obvious by those references.

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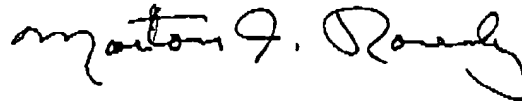
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In view of the foregoing amendments and remarks, Applicants believe that the subject Patent Application is in condition for allowance and such action is respectfully requested.

Respectfully submitted,

For: ROSENBERG, KLEIN & LEE



Morton J. Rosenberg

Registration #26,049

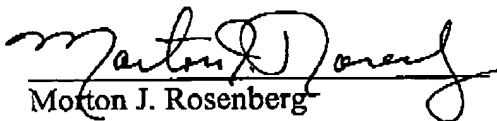
Date: 2/3/05

Suite 101
3458 Ellicott Center Drive
Ellicott City, MD 21043
(410) 465-6678

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Morton J. Rosenberg2/3/05
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